

REMARKS

Claims 1-8 are pending. Claims 4-6 were previously withdrawn. Independent claim 1 and dependent claim 7 are currently amended. The amendments to the claims have been made for purposes of clarification and without adding new matter. Support for the amendment to independent claim 1 may be found, for example, in Applicant's specification at page 4, line 30 through page 5, line 1 (with respect to the claimed "(meth)acrylic polymer"); page 6, line 25 through page 8, line 3 (with respect to the "organophosphorus compound not substantially copolymerizable with a (meth)acrylic monomer"), and Applicant's Examples.

Applicant notes in particular that Examples 6-14 each disclose use of a (meth)acrylic polymer (e.g. partially polymerized polymer (page 14, lines 9-16 and Table 2) with one of TPP (triphenyl phosphate), TCP (tricresyl phosphate), AP422 (ammonium polyphosphate-based flame retardant product of Clariant), AP462 (ammonium polyphosphate surface treated with melamine, flame retardant product of Clariant), or AP750 (ammonium polyphosphate-based flame retardant product of Clariant). Examples 7-8 and 12-16 additionally disclose use of a triazine skeleton-containing compound (TAIC, triallyl isocyanurate, disclosed at page 8, lines 5-18 and Table 2). Examples 15-16 additionally disclose use of GREP-EG (expanded graphite product of TOSOH CORPORATION, Example 16) or S202A (polyphenylene ether product of Asahikasei Chemicals).

Applicant further notes that each of Examples 6-16 is described, at page 18, lines 25-31, as illustrating "[a]n organophosphorous acid compound, which is not substantially copolymerizable with a (meth)acrylic monomer, an expanded graphite, polyphenylene ether and a triazine skeleton-containing compound...used to prepare thermally conductive sheets." Furthermore, with respect to the amendment to independent claim 7, each of Examples 1-16 discloses a (meth)acrylic polymer binder having a phosphorous content of from 0% (Examples 15-16) to 5.2% (Example 10) by weight of the (meth)acrylic polymer binder.

Thus, Applicant respectfully submits that the amendments to claims 1 and 7 are fully supported by Applicant's specification and comply with the written description requirement

under 35 U.S.C. § 112, first paragraph.¹ “The purpose of the description requirement ‘is to ensure that the inventor had possession, as of the filing date of the application relied on, of the specific subject matter later claimed by him.’”² “The application considered as a whole must convey to one of ordinary skill in the art, either explicitly or inherently, that (the inventor) invented the subject matter claimed.”³ In the present case, Applicant respectfully submits that the cited passages of Applicant’s specification, particularly when viewed in light of Applicant’s disclosed Examples, clearly established that Applicant had possession of the presently claimed invention at the time the application was filed.

After this Amendment, claims 1-8 remain pending. Applicant respectfully requests reconsideration and allowance of all pending claims of the application as currently amended, in view of the following arguments.

Rejections under 35 U.S.C. § 112

Claims 1-3 and 7-8 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement under 35 U.S.C. § 112, first paragraph. Applicant has presently amended independent claim 1 to remove reference to a (meth)acrylic polymer not copolymerized with an organophosphorous compound. Applicant respectfully submits that the present amendment to independent claim 1 renders moot the rejection under 35 U.S.C. § 112, first paragraph. Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1-3 and 7-8 under 35 U.S.C. § 112, first paragraph.

Rejections under 35 U.S.C. § 102/103

Claims 1-3 and 7-8 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as allegedly obvious over Yamazaki et al. (JP 2000-313785). Applicant respectfully submits that the present amendment to claim 1 renders moot the rejection of independent claim 1, and claims 2-3 and 7-8 which depend therefrom, over Yamazaki et al. Claim 1 as presently amended broadly claims a thermally conductive fire-retardant flexible sheet comprising (A) a (meth)acrylic polymer, (B) a halogen-free flame

¹ See *Ex parte Holt*, 19 USPQ2d 1211 (BPAI, 1991) (“an invention claimed need not be described *ipsis verbis* in the specification in order to satisfy the disclosure requirements of 35 U.S.C. § 112”).

² See, e.g., *Hyatt v. Boone*, 146 F.3d 1348, 1354-55, 47 USPQ2d 1128, 1132 (Fed. Cir. 1998).

³ See *Continental Can Co. USA v. Monsanto Co.*, 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991).

retardant selected from the group consisting of an organophosphorus compound not substantially copolymerizable with a (meth)acrylic monomer, a triazine skeleton-containing compound, an expanded graphite and polyphenylene ether, and (C) a hydrated metal compound, wherein the composition includes the hydrated metal compound in an amount of 40-90 vol% of the total volume of the composition, wherein the thermally conductive sheet is fire-retardant and flexible.

With respect to the elected species of an organophosphorous compound, Applicant notes that claim 1, as presently amended, expressly claims that the sheet comprises an organophosphorous **compound**, i.e. a separate chemical entity from the (meth)acrylic polymer. Furthermore, although the amendment to dependent claim 7 makes clear that the (meth)acrylic polymer may itself comprise phosphorous, this phosphorous is present in a separate compound (i.e. the (meth)acrylic polymer) from the claimed organophosphorous compound.

Furthermore, Applicant understands Yamazaki et al. to disclose only a radical polymerizable resin that comprises an ester (meth)acrylate phosphate, that is, the phosphate ester (meth)acrylate is co-polymerized into the (meth)acrylate resin, and then combined with aluminum hydroxide to make a flame retardant mold material. This is made clear by Chemical Formula 1 (¶ [0017]) and Adjustment Examples 1-4 (¶ [0037]-[0039] and [0042]).

Thus, Applicant understands that Yamazaki et al. does not disclose, teach or suggest at all Applicant's presently claimed combination of a (meth)acrylic polymer, a halogen-free flame retardant selected from the group consisting of an organophosphorus compound not substantially copolymerizable with a (meth)acrylic monomer, a triazine skeleton-containing compound, an expanded graphite and polyphenylene ether, and a hydrated metal compound.

For at least this reason, Yamazaki et al. has not been shown to disclose, teach or suggest all elements of Applicant's claimed invention, as required to support a rejection for alleged anticipation under 35 U.S.C. § 102.⁴ The rejection of claims 1-3 and 7-8 under 35 U.S.C. § 102(b) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as allegedly obvious over Yamazaki et al. has been overcome and should be withdrawn.

⁴ See *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 231 USPQ 81 (Fed. Cir. 1986) ("for prior art to anticipate under 102 it has to meet every element of the claimed invention").

CONCLUSION

For at least the foregoing reasons, the Office Action has not met its burden of showing that the prior art anticipates or makes obvious Applicant's presently claimed invention. The rejection of claims 1-3 and 7-8 under 35 U.S.C. § 102(b) as allegedly being anticipated by, or in the alternative under 35 U.S.C. § 103(a) as allegedly obvious over Yamazaki et al., has been overcome, and should be withdrawn. Withdrawal of the rejection of claims 1-3 and 7-8 under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement, is also respectfully requested. In view of the above, it is submitted that the application is in condition for allowance. Allowance of all pending claims at an early date is solicited. The Examiner is invited to contact Applicant's attorney to resolve any remaining questions.

Respectfully submitted,

October 7, 2008
Date

By: /James A. Baker/
James A. Baker, Reg. No.: 44,520
Telephone No.: 651-736-9667

Office of Intellectual Property Counsel
3M Innovative Properties Company
Facsimile No.: 651-736-3833